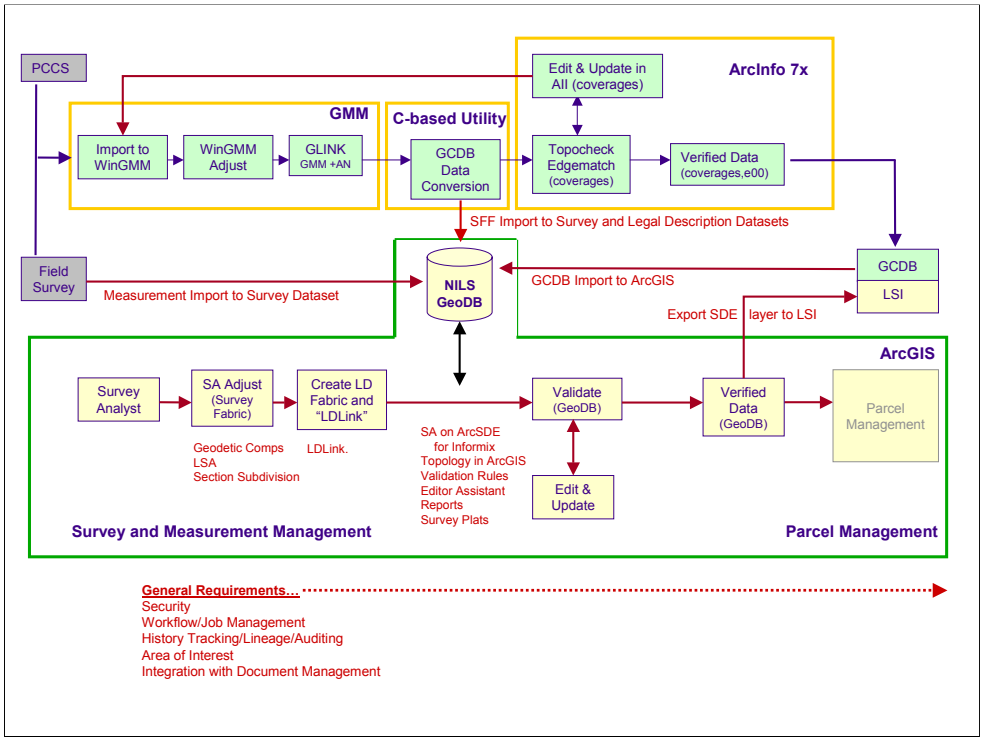
NILS Vision and Concepts

This chapter will introduce you to the NILS vision and concepts for the Bureau of Land Management. It will describe the phased and iterative development approach and what will be delivered in each phase.

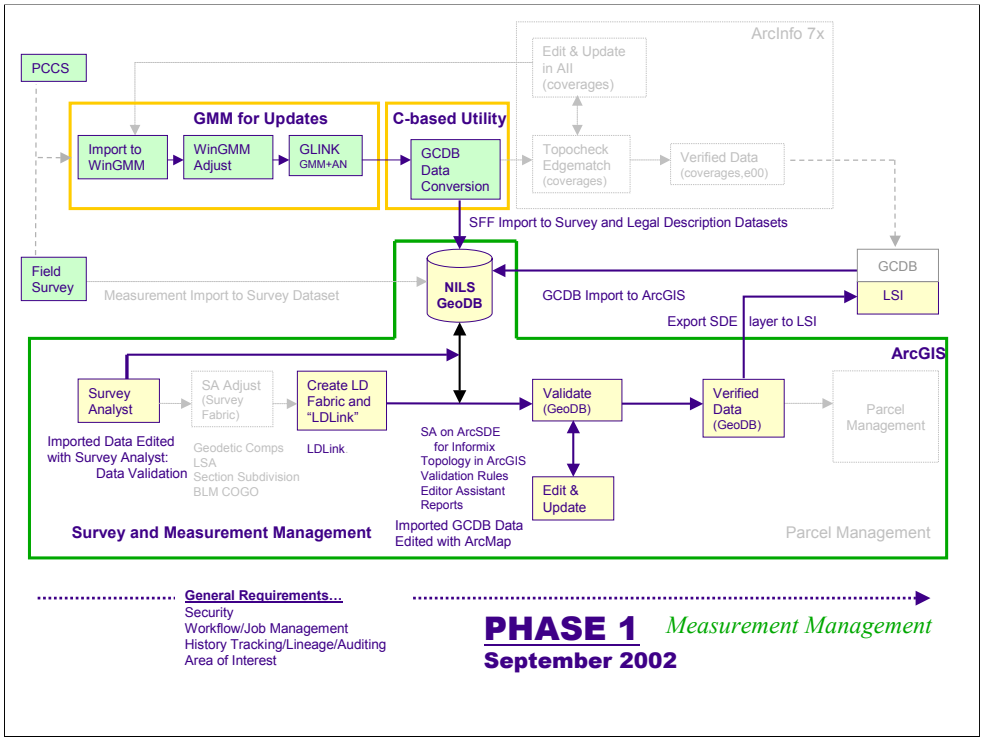


Conceptual description of NILS

This diagram provides a conceptual description of the existing WinGMM and Data Prep processes as well as the NILS components that will replace these systems.

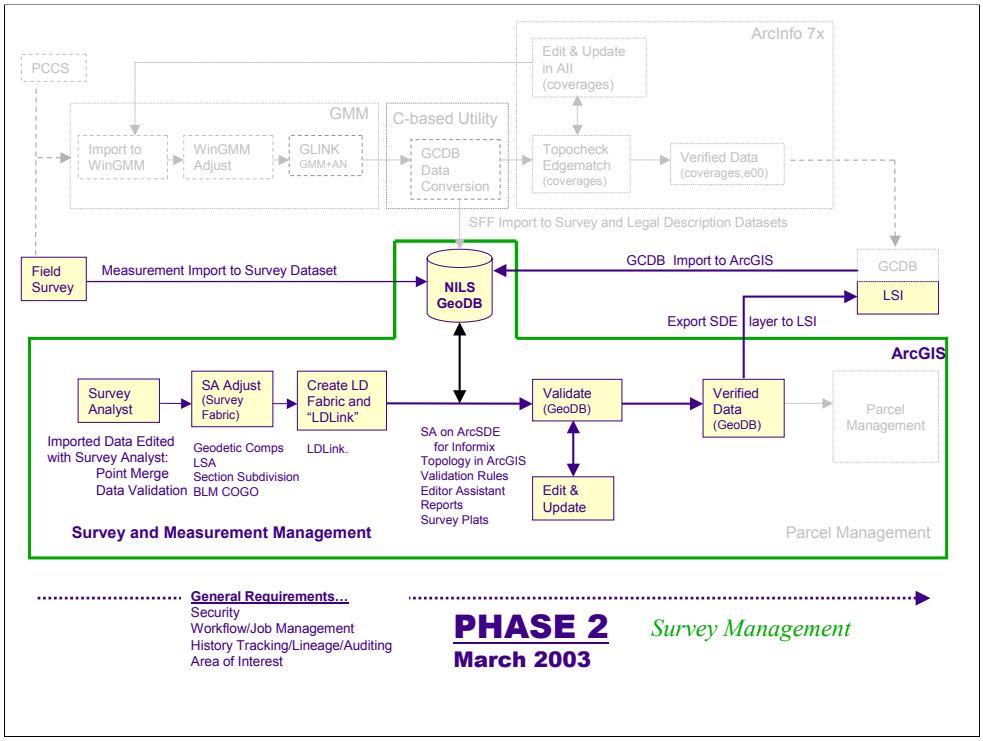
In the current implementation, surveyed data are imported into WinGMM, where they are adjusted and managed. The "GLINK" process is undertaken to create label points (attributes) for each of the legal description polygons. The GMM data are then converted to GIS coverage features with the Data Conversion Software System (DCSS). After the GIS polygons are created, the data are verified for topological accuracy and edge matched using the Topocheck and AII programs that have been developed in the ArcInfo 7.x environment. Once the data are verified, they are exported to shape file format for publication on the LSI website.

NILS will ultimately replace these programs with a single, integrated survey management and GIS environment. ArcGIS 8.3 and the Survey Analyst extension provide a relational database model for storing and managing the survey coordinates, measurements, computations, and the line and polygon features derived from them. Survey Data are adjusted using the Survey Analyst tools. The Legal Description (LD) fabric is created directly from the survey data. Links between the survey and GIS feature data maintain the vertical integration between the two "layers". Topology validation tools, as well as editing tools are provided for managing both the survey and GIS feature data. Parcel Management activities will also be integrated into the ArcGIS editing environment, so that surveys, legal descriptions, and parcels can be managed in a single integrated environment. As in the existing system, after the data are verified for accuracy, they will be provided to other users through a publication database and web site.



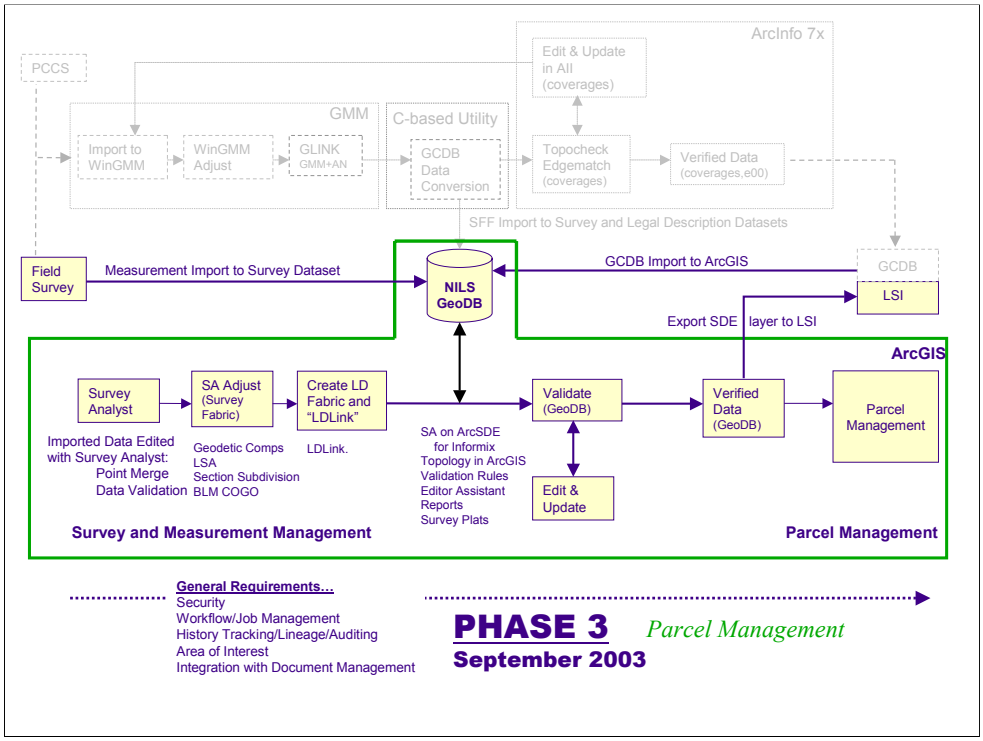
NILS Phase 1

Phase 1 will provide tools for importing WinGMM and GCDB coverage data into the NILS Geodatabase model. The legacy components shown in gray in the diagram will be replaced in phase 1 by new tools for editing and validating the legal description data. In addition to data validation, tools for managing workflow, merging points, and linking the survey data to the LD data will be available. WinGMM will still be in use until Phase 2.



NILS Phase 1

Phase 2 replaces the WinGMM tools with equivalent functionality in the integrated NILS geodatabase environment. Survey data are adjusted and managed in the geodatabase, and the LD fabric is maintained concurrently.



NILS Phase 3

In phase 3, all of the parcel management capabilities will be delivered, including integration with the existing LR2000 database and tools for calculating and mapping land status directly in the Geodatabase.

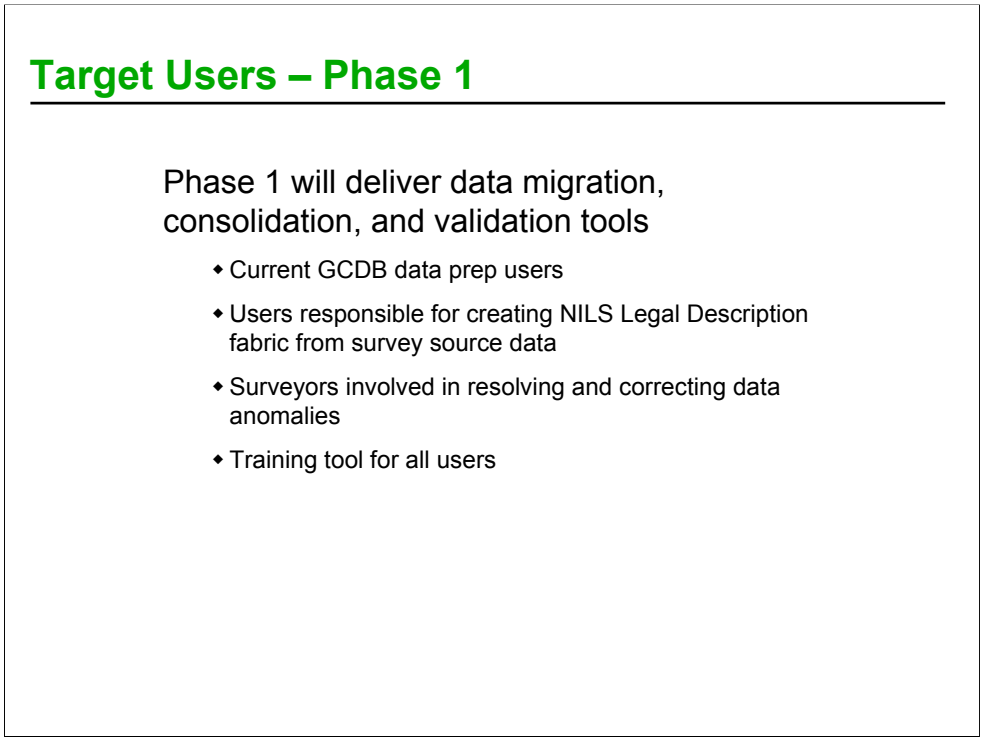
Overall NILS Implementation strategy

This table provides a summary of what functions will be implemented at each phase of the NILS deployment within each category of components. NILS consists of a set of general requirements that cut across all areas of the program. These have been documented in the Detailed Feature Function document and are summarized in the table above. General requirements include functions for workflow management, security and access, and transaction management.

The Survey Management and Measurement Management (SM/MM) functions include data importing tools as well as tools for adjusting and managing the measurements, coordinates and computations in a survey network.

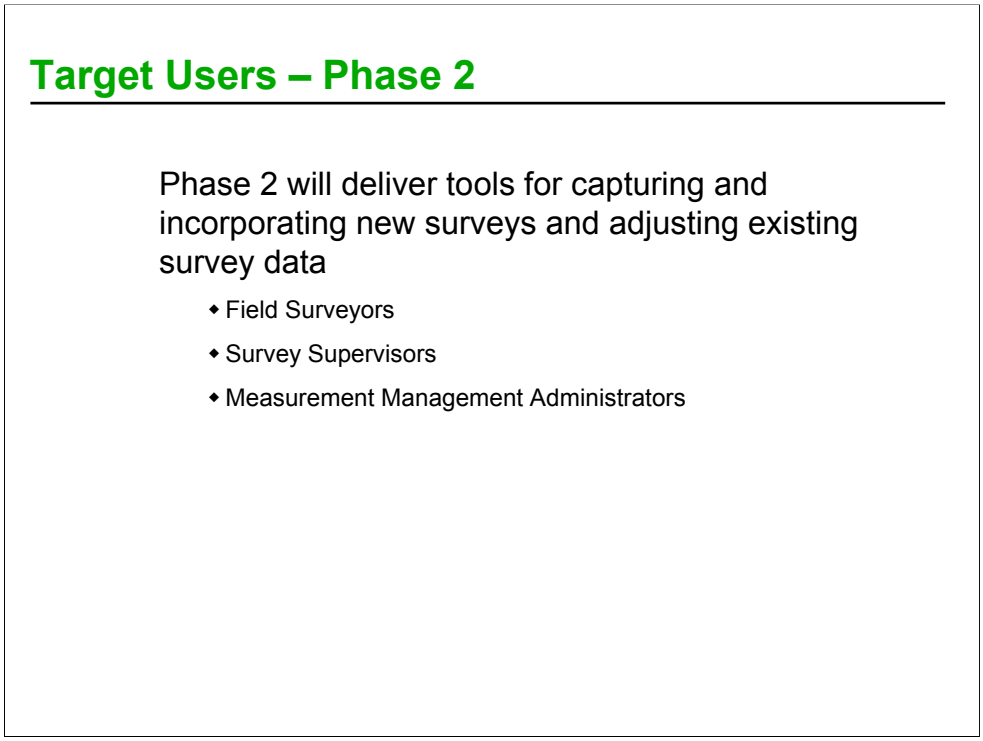
The SM/MM Data prep functions include those requirements that are currently undertaken using the GCDB Data Prep tools.

The Parcel Management functions (PM) include tools for creating parcels from the LD fabric, as well as tools for generating legal descriptions based upon the parcel geometry. The tools to be delivered for PM also include an interface to LR200 and a digital Master Title Plat (MTP).



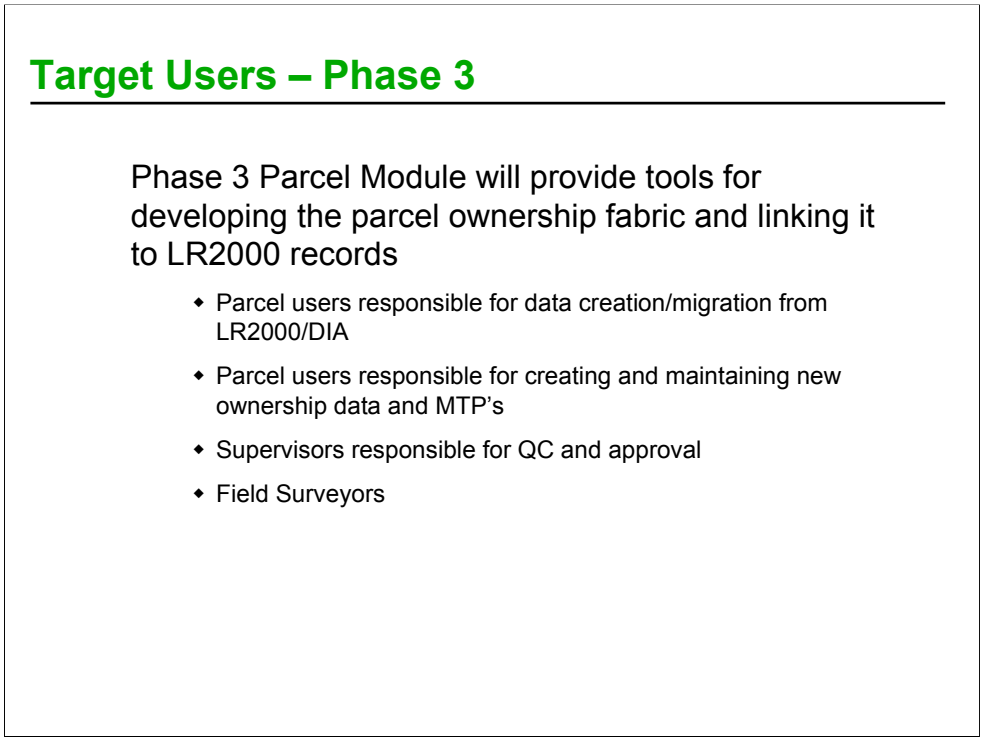
Phase 1

Phase 1 will implement data migration, consolidation, and validation tools.



Phase 2

Phase 2 will implement tools for capturing and incorporating new surveys and adjusting existing survey data.



Phase 3

Phase 3 - Parcel Module will provide tools for developing the parcel ownership fabric and linking it to LR2000 records.